

## CLAIMS

What is claimed is:

*Sub 17* 1. A method of packaging a semiconductor device assembly having a semiconductor die having a plurality of bond pads thereon and having a portion thereof attached to a portion of a lead frame having a plurality of leads, at least one bond pad of said semiconductor die connected to at least one lead of said plurality of leads of said lead frame, comprising: forming a heat sink having a top surface and a bottom surface, each top and bottom surface having peripheral edges therearound; forming a substantially continuously formed protruding edge from the heat sink at the peripheral edges of the bottom surface of the heat sink; positioning the top surface of the heat sink adjacent to said semiconductor die having a plurality of bond pads thereon; placing the heat sink and semiconductor die in a transfer molding apparatus having the protruding edge formed at the peripheral edges of the bottom surface of the heat sink in contact with a portion of the transfer molding apparatus; and removing the dam from adjacent to the surface of the heat sink following the encapsulation of the semiconductor die and the heat sink.

2. The method of claim 1, wherein the protruding edge is removed with heat.

3. The method of claim 1, wherein the protruding edge is removed during an electrolytic deflash cycle.

*Sub 17* 4. A method of packaging a semiconductor device assembly having a semiconductor die having a plurality of bond pads thereon and having a portion thereof attached to a portion of a lead frame having a plurality of leads, at least one bond pad of said semiconductor die connected to at least one lead of said plurality of leads of said lead frame, comprising: forming a dam adjacent the periphery of a heat sink from the material of the heat sink, said dam protruding from edge portions of said periphery of said heat sink;

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positioning the heat sink adjacent to a semiconductor device;  
positioning the dam, heat sink, and semiconductor die in a transfer molding apparatus having the dam contacting a portion of the transfer molding apparatus;  
encapsulating the semiconductor die and heat sink in molding material in the transfer molding apparatus; and  
removing the dam from adjacent to the surface of the heat sink following the encapsulation of the semiconductor die and the heat sink in molding material in the transfer molding apparatus.

5. A method of packaging a semiconductor device assembly having a semiconductor die having a plurality of bond pads thereon and having a portion thereof attached to a portion of a lead frame having a plurality of leads, at least one bond pad of said semiconductor die connected to at least one lead of said plurality of leads of said lead frame, comprising:  
providing a heat sink;  
forming a dam adjacent the periphery of a heat sink from the material thereof, said dam configured as a protruding edge portion of said periphery of said heat sink;  
positioning the heat sink adjacent to said semiconductor die;  
positioning the lead frame, said semiconductor die, the heat sink, and the dam in a transfer molding apparatus, the dam contacting a portion of the transfer molding apparatus;  
encapsulating a portion of said portion of the lead frame, said semiconductor die, and the heat sink in molding material in the transfer molding apparatus; and  
removing the dam from adjacent to the surface of the heat sink following the encapsulation of said semiconductor die and the heat sink in molding material in the transfer molding apparatus.